resources and ecosystem dynamics of specific varieties and if so, to what extent ;

(b) what are the varieties of fish whose ecosystem dynamics is being studied and what are their economic implications ;

(c) whether Government propose to acquire or construct some more such research vessels; and

(d) whether coast benefit studies of such vessels have been made ?

THE MINISTER OF STATE IN THE DEPARTMENT OF OCEAN DEVELOPMENT (SHRI EDUARDO FALEIRO) : (a)and(b) Yes, Sir.

The Fisheries Oceanographic Research Vessel SAGAR SAMPADA has undertaken more than 110 cruises in the Exclusive Economic Zone of our country in different regions and different seasons. During the exploratory fishing cruises, many areas having potential resources of deep sea forms such as Indian Drfift Fish, Bulls Eye, Pink Perch, Ribbon Fishes, Carrangids, other forms of perches, deep sea Prawns, Deep Sea Lobster and Cuttle Fish have been identified. Many fishery related parameters, such as Hydrography, Phytoplan-kton, Zoo Plankton production in different ecological realms, such as inshore, offshore, deep sea and oceanic regions including the seas around Lakshadweep and Andaman & Nicobar Islands have been observed during the cruises for understanding the dynamics of production and distribution of Meso-plagic Demersal Resources.

(c) and (d) The present strength of the vessel is not sufficient keeping in iew the area of operation of our EEZ. A proposal is under formulation to acquire a multipurpose oceanographic research vessel which can also be used for fishery oceanographic surveys. A cost benefit analysis will be undertaken while processing the proposal.

**Survey of Exclusive Economic Zone**

1475. DR. SHRIKANT RAMCHANDRA JICHKAR : Will the PRIME MINISTER be pleased to state:

(a) whether cobalitiferrous crust on submerged plateaus in India's Exclusive Economic Zone have been fully or partially surveyed ;

(b) if so, what is their extent and economic significance ;

*(c)* in what part of EEZ they are located ;

(d) whether the Oceanographic Research Vessel "Sagar Kanya" is alone sufficient to do the survey or we require some more such vessels ; and

(e) if so, by when Government would procure more such vessels ?

THE MINISTER OF STATE IN THE DEPARTMENT OF OCEAN DEVELOPMENT (SHRI EDUARDO FALEIRO) : (a) to (c) The covalt rich manganese encrustation normally occurs on ancient 'underwater seamounts where up-welling takes place and biological activity also is significant. So far no such work on the cobalt rich manganese encrustation has been undertaken by the concerned Institutions in the EEZ of our country.

(d) and (e) The present strength of the vessels is not sufficient in view of the area of ooperation in the EEZ. A proposal is under formulation to acquire a multipurpose Oceanographic Research Vessel which could also be used for non-living resource survey.

HSurvey and study of sulphide Mineralisation

1476. DR. SHRIKANT RAMCHANDRA JICHKAR : Will the PRIME MINISTER be pleased to state :

(a) whether the survey and study of the Sulphide mineralisation in Carlsberg Ridge and in the Andaman Sea has been made;

(b) if so, what are the environmental impliations of its mining ;

(c) if not, by when the survey and study is likely to be completed ;

(d) whic hreserach vessel is engaged in doing this suavey;

(e) how can one research vessel be engaged in so many diverse activities like survey of cobaltiferrous crust, coastal zone resources, sulphide maitieralisation survey etc. ; and

(f) whether it is also a fact that because of this, justice is not being met to any of the survey ?